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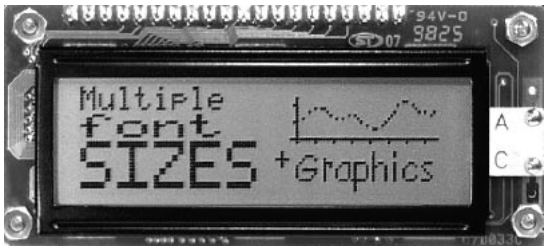
Jameco Part Number 158166

Data Sheet
G12032 • v1.1 • 01/99

Serial LCD with 120x32-pixel Graphics and Four Font Sizes



3.2 x 1.4 in.
(80 x 36 mm)

The G12032 offers 120-by-32-pixel graphics and tremendous font flexibility at a bargain price. It interfaces with a computer through a 2400 or 9600-baud RS-232 serial hookup.

Mini Serial Terminal with Multiple Font Sizes

The G12032 works like a serial-receive terminal. It can display text in four different font sizes, allowing you to format the screen as 4 lines of 20 small characters or 2 lines of 10 large characters, or mix font sizes freely to achieve special effects.

The display understands common control characters like carriage returns, linefeeds, tabs, backspace, etc. Special characters allow cursor positioning and backlight control. Most text commands are the same as those for our advanced (BPP- and ILM-) text displays.

Versatile Graphics Display with Image Storage

Plotting points, drawing lines, and displaying full-screen pictures are easy with the G12032's graphics instructions. Its 4kB EEPROM, which retains data with power off, stores the text font plus six screen images. You can create or edit fonts and graphics on your PC, then download them to the G12032 using the included utility program.

A 160-character alphanumeric font and example graphics come preloaded in EEPROM. Need more characters/symbols? The G12032 lets you use part or all of its graphics memory for additional fonts, for a total of up to 640 characters.

Exceptional Value

We pulled out all the stops to make the G12032 the most versatile, economical serial display on the market. It's priced lower than some comparable alphanumeric displays. Within a minute of opening the box you can have this display running a built-in demo (9V battery or 5V supply required). The standard package includes a 3.5" disk with extensive hyperlinked HTML manual (use any web browser to view), a graphics conversion/downloading utility, and program examples.

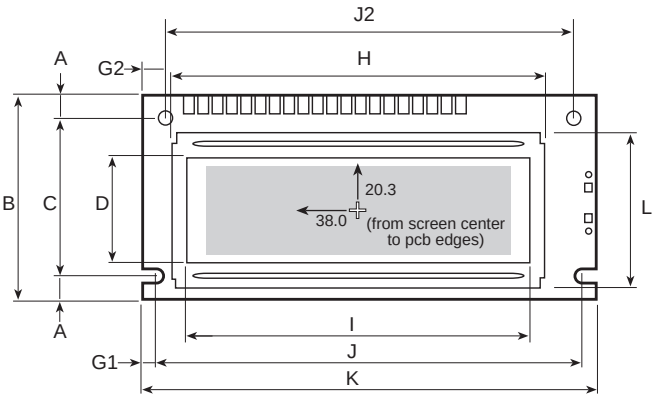
Ordering Information

G12032 Serial Graphics LCD with manual/utilities on disk (SGX-120L).....99.00

Mounting kit for G12032 with faceplate, hardware (BEZ-120) 12.00

Figure 1. Dimensional data

A	y offset pcb edge to hole ctr	4.00
B	y pcb height	36.00
C	y hole spacing	28.00
D	y screen opening	18.50
E1	y character size (small font)	3.92
E2	y character size (large font)	7.84
F1	x character size (small font)	2.94
F2	x character size (large font)	5.88
G1	x offset pcb edge to hole ctr (btm)	2.50
G2	x offset pcb edge to hole ctr (top)	4.00
H	x screen frame	65.70
I	x screen opening	60.50
J1	x hole spacing (btm)	75.00
J2	x hole spacing (top)	72.00
K	x pcb width	80.00
L	y frame height	27.40



- All dimensions in mm.
- Tolerance for dimensions is ±0.50mm.
- Maximum depth (from front of screen frame to highest point on serial interface board) is 30mm.
- Screen is not centered on pcb. It is 2mm to the left and 2.3mm below pcb center point.
- Mounting holes appropriately sized for 2-56 mounting screws.
- NOTE: Dimensions subject to change. Critical applications should be based on *actual measurements*.

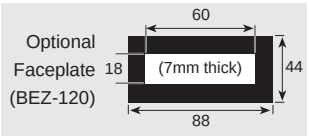


Table 1. Basic specifications

Backlight type .....LED array, yellow-green
Power requirements (BL off)* .....4.5 to 5.5 Vdc @ 15mA
Power requirements (BL on)* .....4.5 to 5.5 Vdc @ 45mA
User connector.....five 0.025" posts on 0.10" centers
Connector pinout (5-pin) .....+5 GND SER GND +5
Serial input.....RS-232, or inverted TTL/CMOS, 9600 or 2400, N81
Serial data rates.....2400 or 9600 bps
Operating temperature.....0° to 50°C (32° to 122°F)

* NOTE: Unit includes an input for 9V unregulated power; 9V battery suggested.

Table 2. Text control characters and graphics instructions by function

Text Control Codes

Function	Code	ASCII
Cursor home	ctrl-A	1
Begin inverse-video text	ctrl-B	2
End inverse-video text	ctrl-C	3
ignored	ctrl-D	4
ignored	ctrl-E	5
ignored	ctrl-F	6
ignored	ctrl-G	7
Backspace	ctrl-H	8
Horizontal tab (go to next 4x column)	ctrl-I	9
Smart linefeed (go down one line)	ctrl-J	10
Vertical tab (go up one line)	ctrl-K	11
Formfeed (clear text screen)	ctrl-L	12
Carriage return	ctrl-M	13
Backlight on	ctrl-N	14
Backlight off	ctrl-O	15
Accept cursor-position entry	ctrl-P	16
Accept data for right alignment	ctrl-R	18
Escape (begin graphics instruction)	ctrl-[	27

Graphics Escape Sequences

Function	Escape Sequence
Set screen address for byte write	ESC A x y
Write byte value n to present screen address	ESC B n
Download full-screen graphic (480 bytes)	ESC D G
Display EEPROM screen n (n=0—7)	ESC E n
Set font size and EEPROM source page to n	ESC F n
Set “ink” for points and lines to n; 1=black, 0=white	ESC I n
Plot a line from x1 y1 to x2 y2	ESC L x1 x2 y1 y2
Set graphics mode to n; 0=OR, 1=XOR	ESC M n
Plot a point at x y	ESC P x y
Reverse (invert) lines by n	ESC R n
Plot line from last line end to x y	ESC T x y
Set vertical origin to top (n=0) or bottom (n=1)	ESC V n
Write startup configuration data to EEPROM	ESC W n
Transfer image from graphics layer to EEPROM screen n (0—7)	ESC X n

NOTE: At startup, the screen is cleared, and all graphics settings are 0 except Ink, which is 1 (to plot dark pixels on a light background).